OUTPUT PENTODE FOR LINE DEFLECTION

Output pentode intended for use as horizontal deflection amplifier in small screen television receivers.

QUICK REFERENCE DATA				
Anode peak voltage	V_{ap}	max.	7	kV
Cathode current	I_k	max.	180	mA

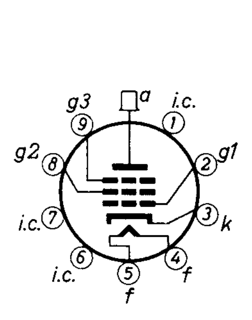
HEATING : Indirect by A.C. or D.C.; series supply

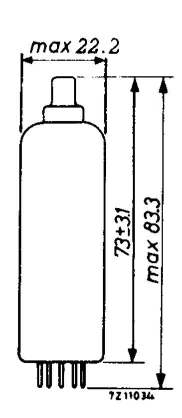
Heater current	I_f	300	mA
Heater voltage	V_f	21.5	V

DIMENSIONS AND CONNECTIONS

Dimensions in mm

Base: Noval





CAPACITANCES

Anode to all except grid No. 1	$C_{a(g1)}$		6	pF
Grid No. 1 to all except anode	$C_{g1(a)}$		14	pF
Anode to grid No. 1	C_{ag1}	max.	0.8	pF
Anode to cathode	C_{ak}	max.	0.1	pF
Grid No. 1 to heater	C_{g1f}	max.	0.2	pF

TYPICAL CHARACTERISTICS

A)

Anode voltage	V_a	170	V
Grid No. 3 voltage	V_{g3}	0	V
Grid No. 2 voltage	V_{g2}	170	V
Grid No. 1 voltage	V_{g1}	−24	V
Anode current	I_a	45	mA
Grid No. 2 current	I_{g2}	2.4	mA
Transconductance	S	6.3	mA/V
Internal resistance	R_i	11	kΩ
Amplification factor	μ_{g2g1}	5.0	

TYPICAL CHARACTERISTICS (continued)

B) (Measured under pulse conditions)

Anode voltage	V_a	40	V
Grid No. 3 voltage	V_{g3}	0	V
Grid No. 2 supply voltage	V_{bg2}	190	V
Grid No. 2 series resistor	R_{g2}	4.7	kΩ
Grid No. 1 voltage	V_{g1}	0	V
Anode current	I_a	180	mA
Grid No. 2 current	I_{g2}	18	mA

OPERATING CONDITIONS

Stabilized circuits (D.C. feedback)

Cut-off voltage

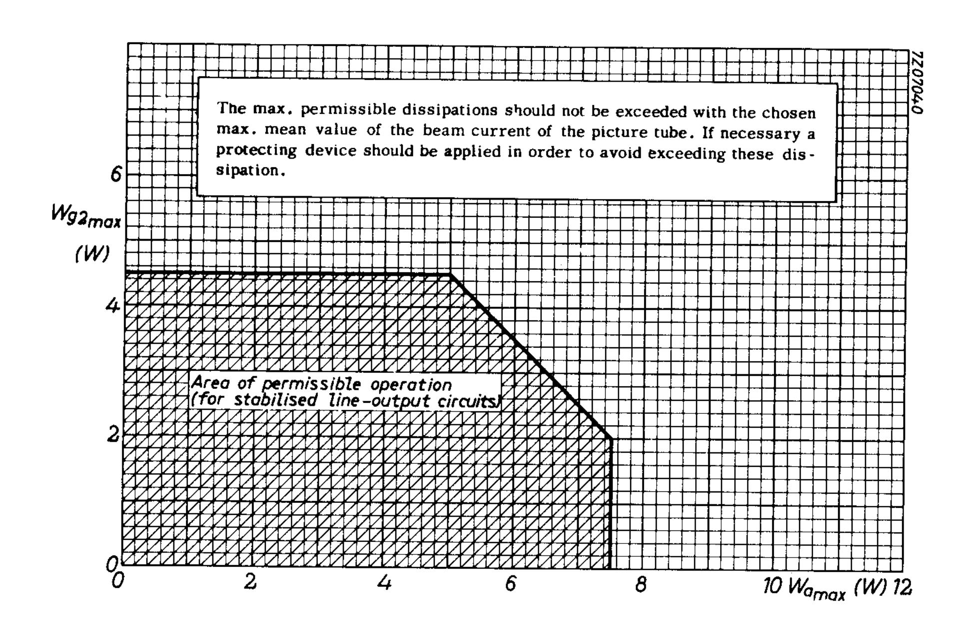
The minimum required cut-off voltage ($-V_{g1}$) during flyback is 120 V at V_a = 6000 V, V_{g2} = 190 V and Z_{g1} = 1 kΩ at line frequency.

Supply voltage: See page 5

Minimum required values of the screengrid voltage and of the anode voltage, when the tube is used in a line output stage.
The graphs refer to nominal mains voltage provided the specified values of I_a at $V_{a\ min}$, will be available throughout life of the tube at supply voltage values 10% below nominal.
In order to prevent Barkhausen interferences and less of stabilisation, care should be taken that the anode voltage never drops below the specified $V_{a\ min}$ during the scanning period.

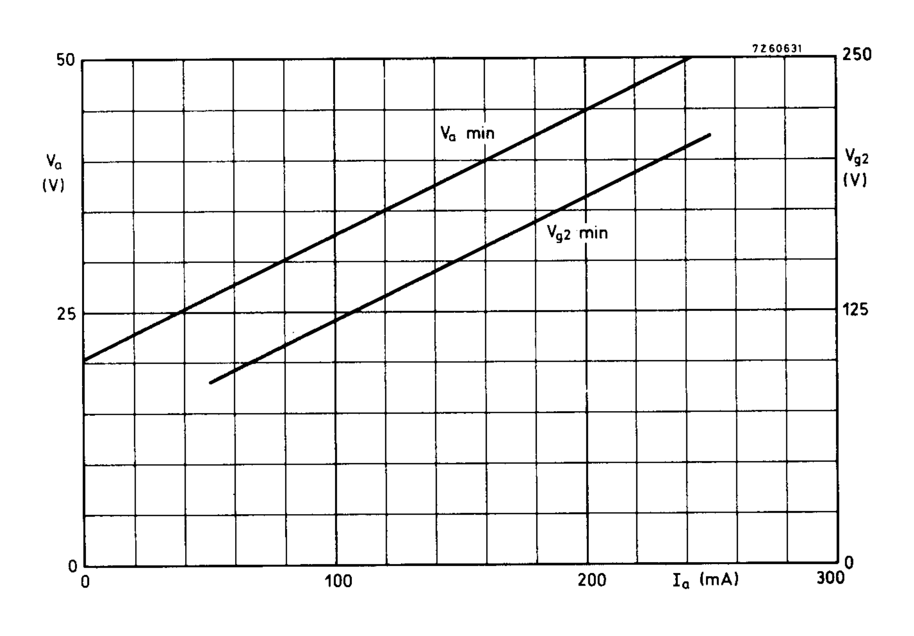
LIMITING VALUES (Design centre rating system)

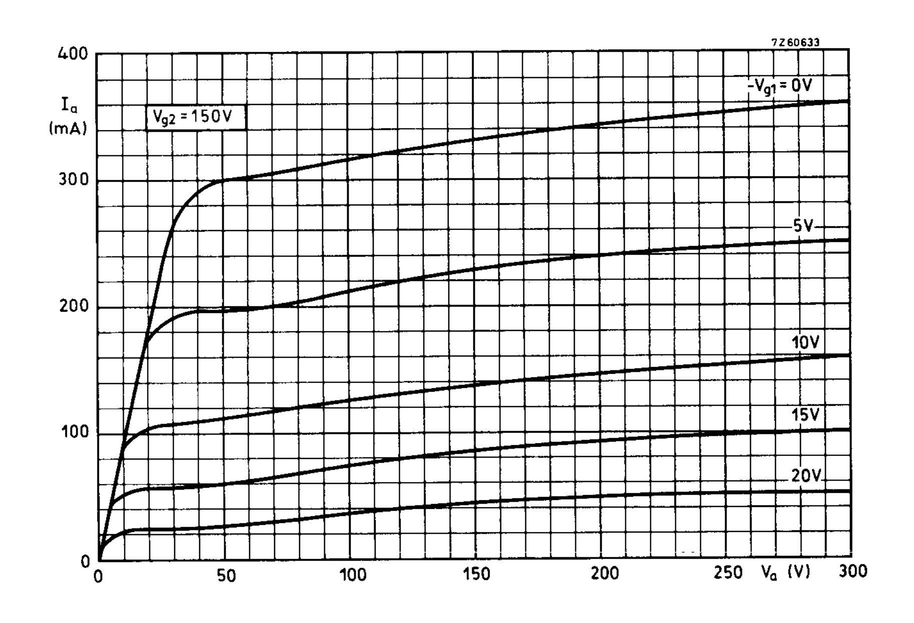
Anode voltage	V_{a_o}	max.	550	V
	V_a	max.	250	V
Anode voltage, peak	V_{ap}	max.	7	kV [1]
negative peak	$-V_{ap}$	max.	7	kV [1]
Anode dissipation	W_a	see figure below		
Grid No. 2 dissipation	W_{g2} [2]	see figure below		
Anode + grid No. 2 dissipation	$W_a + W_{g2}$	see figure below		
Grid No. 2 voltage	V_{g2_o}	max.	550	V
	V_{g2}	max.	250	V
Cathode current	I_k	max.	180	mA
Cathode to heater voltage	V_{kf}	max.	200	V
Grid No. 1 resistor	R_{g1}	max.	0.5	MΩ

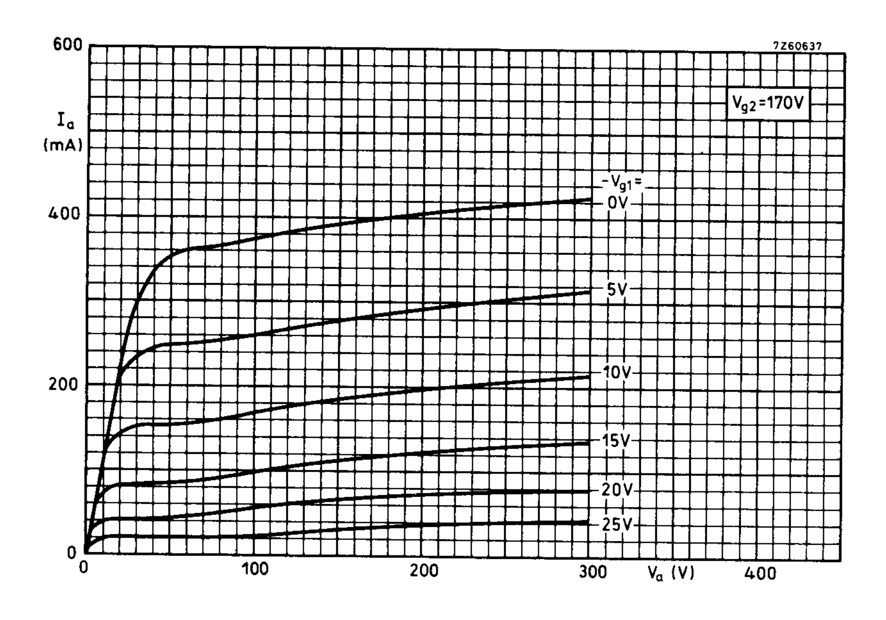


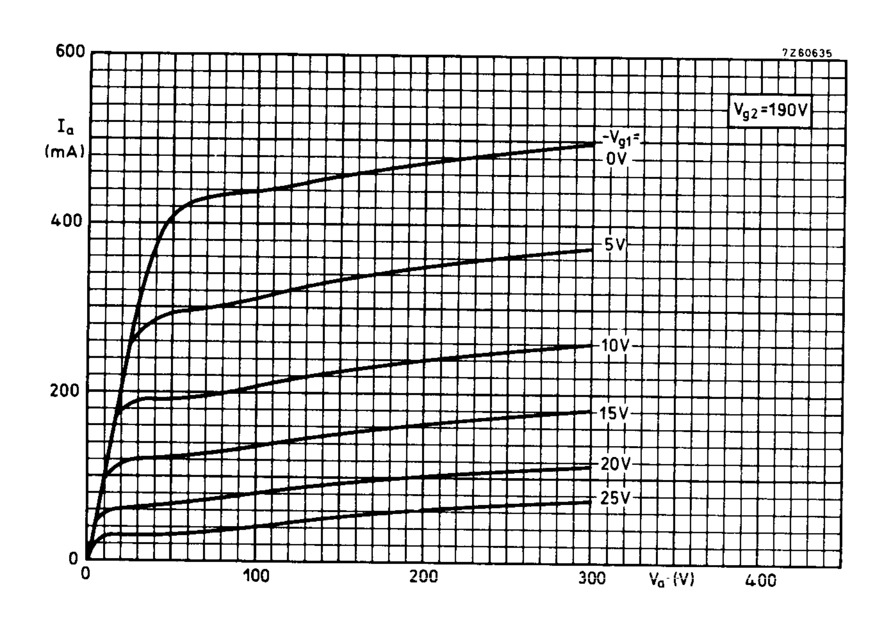
[1] Maximum pulse duration 22% of a cycle but maximum 18 μs.

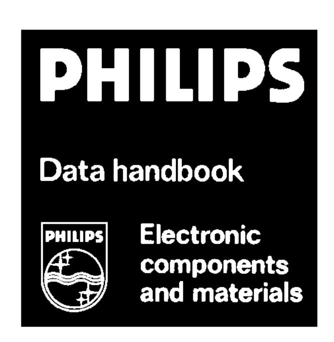
[2] During the heating-up of the cathode W_{g2} = max. 6 W.


7Z60631
50
25
0
250
125
0
V_a
(V)
V_{g2}
(V)
V_a min
V_{g2} min
0
100
200
I_a (mA)
300


7Z60633
400
300
200
100
0
I_a
(mA)
V_{g2} = 150V
$-V_{g1}$ = 0V
5V
10V
15V
20V
0
50
100
150
200
250
V_a (V)
300


7Z60637
V_{g2}=170V
I_a (mA)
600
400
200
0
$-V_{g1}$=
0V
5V
10V
15V
20V
25V
0
100
200
300
V_a (V)
400


7Z60635
V_{g2}=190V
I_a (mA)
600
400
200
0
$-V_{g1}$=
0V
5V
10V
15V
20V
25V
0
100
200
300
V_a (V)
400



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